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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,057	08/28/2001	Steven W. Rogers	5150-59901	5661

35690 7590 01/06/2005

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

EXAMINER	
KENDALL, CHUCK O	

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 01/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/941,057	ROGERS ET AL.	
	Examiner	Art Unit	
	Chuck Kendall	2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *09/203* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the application filed 08/09/04.

2. Claims 1 – 36 have been examined.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 – 7 & 9 – 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leask et al. USPN 6,412,106 B1 (hereinafter "Leask") in view of Kodosky USPN 5,481,740.

Regarding claim 1, Leask discloses a computer-implemented method for creating a graphical program, the method comprising:

creating a first graphical program wherein said creating comprises interconnecting at least two of a first plurality of graphical program nodes or icons, wherein the first graphical program comprises the first plurality of interconnected graphical program nodes or icons which graphically represents functionality of the first graphical program, and wherein the first graphical program is executable by a computer system to perform the functionality (7: 7 – 20);

storing the first graphical program in a memory (10:1 – 5, see graphical program to be debugged, running either locally or remotely);

associating a debugging graphical program at a debugging location in the first graphical program, wherein said associating does not modify the functionality of the first graphical program; (10:1 – 5, see graphical debugger program 100, which is also either local or remote);

wherein the debugging graphical program is executable during execution of the first graphical program to aid in debugging at least a portion of the first graphical program (10: 5 – 10, see "utilized to debug locally stored programs or programs stored at remote locations"). Although, Leask doesn't expressly disclose wherein the debugging graphical program comprises a second plurality of interconnected graphical program nodes or icons that graphically represents functionality of the debugging graphical program, and wherein the debugging graphical program is executable by the computer system to perform the functionality, Leask does disclose "debugging computer programs which allow a programmer to insert breakpoints and other debug tools into a graphical representation of a computer program...". (6:55 – 60) further stating that it allows a programmer to interact directly with a graphical representation (7: 1 – 5). However, Kodosky in an analogous art teaches a panel palette in a graphical debugging environment which includes command buttons or icons that graphically represent the functionality of the debugging program (35:15 – 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Kodosky's limitations of providing interconnected graphical icons that graphically represent the functionality of the

debugging with Leask because, it would make debugging more efficient since the programmer can interact directly with the debugging program.

Regarding claim 2, the computer-implemented method of claim 1, wherein said associating does not require a recompilation of the first graphical program (Leask, 5: 15 – 20, shows prior art teaches away from recompilation).

Regarding claim 3, the computer-implemented method of claim 1, further comprising:

executing the first graphical program up to the debugging location (10:1 – 5);

executing the debugging graphical program after executing the first graphical program up to the debugging location (Leask, 10:1 – 5); and

the debugging graphical program generating debugging results, wherein the debugging results are useful in analyzing at least a portion of the first graphical program (Leask, 12:50 – 57).

Regarding claim 4, the computer-implemented method of claim 3, further comprising:

completing execution of the first graphical program based on the debugging results of said executing the debugging graphical program (Leask, 7:30 – 35).

Regarding claim 5, the computer-implemented method of claim 3, wherein said executing the debugging graphical program includes displaying the debugging results of the debugging graphical program (Leask, 7: 8 – 20).

Regarding claim 6, the computer-implemented method of claim 3, wherein said executing the debugging graphical program comprises:

receiving data from the first graphical program (Leask, 19:30 – 40, see request and receive); and

performing one or more of displaying the data from the first graphical program (Leask, 21: 40 – 43);

and/or logging the data from the first graphical program to a file (Leask, 26: 54, for logging see memory for storing).

Regarding claim 7, the computer-implemented method of claim 3, wherein said executing the debugging graphical program comprises:

receiving data from the first graphical program (Leask, 10: 5 – 10);

generating statistics based on the received data (Leask, 3:15 – 23); and

displaying the statistics (Leask, 7: 7– 10, see application program to be debugged is displayed);

Regarding claim 9, the computer-implemented method of claim 3, wherein said completing execution of the first graphical program is performed in single stepping mode based on the debugging results of said executing the debugging graphical program (Leask, FIG. 5, 414, & 416, see associated text also).

Regarding claim 10, the computer-implemented method of claim 1, further comprising:

executing the first graphical program up to the debugging location, wherein the first graphical program generates data at the debugging location (Leask, 10:5 – 10);

providing the data to the debugging graphical program (Leask, 3:15 – 23, & 10:1 – 5);

executing the debugging graphical program, wherein the debugging graphical program uses the data (Leask, 3:15 – 23, also see 7: 7– 10);

the debugging graphical program generating debugging results (Leask, 7: 7– 10);

based on the debugging results, performing one or more of:

halting execution of the first graphical program (Leask, FIG.9, 914);

entering single stepping mode in the first graphical program (Leask, FIG. 9, 916);

or completing execution of the first graphical program (Leask, FIG.5, see 414 & 416).

Regarding claim 11, the computer-implemented method of claim 10, wherein the first graphical program executes up to the debugging location where the debugging graphical program is associated, and waits for user input (Leask, FIG.9, 918).

Regarding claim 13, the computer-implemented method of claim 12, wherein the first graphical program comprises a plurality of data flow paths (Leask, 12:18 – 20, call flow);

wherein said associating a debugging graphical program at a location in the first graphical program comprises associating the debugging graphical program at a first data flow path in the first graphical program (Leask, 12: 20 – 25).

Regarding claim 14, the computer-implemented method of claim 13, wherein said associating comprises:

storing information in at least one data structure, wherein the information comprises information regarding the first graphical program, the debugging graphical program, and the location where the debugging graphical program is attached along the first data flow path of the first graphical program (Leask, 10:1 – 10).

Regarding claim 15, the computer-implemented method of claim 13, wherein said associating comprises:

receiving user input from a pointing device selecting a data flow path in the first graphical program, wherein the first data flow path is configured to carry data of a first data type;

display a plurality of debugging graphical programs (Leask, 21: 40 – 43, and 55 – 60, for multiple debug tools); and

receiving user input selecting one of the debugging graphical programs (Leask, 21: 47 – 50, see touch tones for user input).

Regarding claim 16, the computer-implemented method of claim 13, wherein said associating comprises:

receiving user input selecting the first data flow path in the first graphical program, wherein the first data flow path is configured to carry data of a first data type (Leask, FIG.8, 810, and associated text);

determining the first data type of the first data flow path;

displaying a plurality of debugging graphical programs appropriate for the first data type of the first data flow path (Leask, 21: 40 – 43, and 55 – 60, for multiple debug tools); and

receiving user input selecting the debugging graphical program from the plurality of debugging graphical programs appropriated for the first data type of the first data flow path (Leask, 26: 59 – 65, also see Kodosky, 18:27 – 35).

Regarding claim 17, the computer-implemented method of claim 13, wherein said associating the debugging graphical program at the debugging location in the first graphical program comprises associating the debugging graphical program at a node in the first graphical program (Leask, 10: 1 – 5, for node see local).

Regarding claim 18, the computer-implemented method of claim 1, further comprising:

disassociating the debugging graphical program from the first graphical program, wherein said disassociating does not modify the first graphical program and/or does not require a re-compilation of the first graphical program (Leask, 5: 15 – 20, shows prior art teaches away from recompilation).

Regarding claim 19, the computer-implemented method of claim 1, wherein the first graphical program is located on a first computer system;

wherein the debugging graphical program is located on a second computer system, wherein the second computer system is coupled to the first computer system over a network (Leask, 10: 1 – 10, see local and remote).

Regarding claim 20, the computer-implemented method of claim 19, the method further comprising:

executing the first graphical program on the first computer system up to the debugging location (Leask, 7: 7 – 20);

executing the debugging graphical program on the second computer system, wherein the debugging graphical program is executed after executing the first graphical program on the first computer system up to the debugging location (Leask, 10: 1 – 10);

the debugging graphical program generating debugging results on the second computer system (Leask, 10: 5 – 10); and

providing the debugging results from the second computer system to the first computer system (Leask, 10: 5 – 10, also see FIG. 7, 708 & 710, for send and receive data between debug engine and user application (graphics program)).

Regarding claim 21, the computer-implemented method of claim 1, wherein the first graphical program is located on a first computer system, wherein the first computer system is a target computer system coupled to or comprised in a second computer system (Leask, 10: 1 – 10, see local and remote);

wherein the debugging graphical program is located on and executed on the first computer system (Leask, 10: 1 – 10, see local and remote as well as debug program and graphics program).

Regarding claim 22, computer-implemented the method of claim 1, wherein the first graphical program is located on a first computer system, wherein the first computer system is a target computer system coupled to or comprised in a second computer system (Leask, 10: 1 – 10, see local and remote);

wherein the debugging graphical program is located on and executed on the second computer system (Leask, 10: 1 – 10, see local and remote, teaches the debug tool to be either remotely or locally located).

Regarding claim 23, the computer-implemented method, recites similar limitations as in claim 2, see rationale as previously discussed above.

Regarding claim 24, the computer-implemented method, recites similar limitations as in claim 10, see rationale as previously discussed above.

Regarding claim 25, the computer-implemented method, also recites similar limitations as in claim 2, see rationale as previously discussed above.

Regarding claim 26, the computer-implemented method, recites similar limitations as in claim 1, see rationale as previously discussed above.

Regarding claim 27, which is also a method claim, recites similar limitations as in claim 1, see rationale as previously discussed above.

Regarding claim 28, which is also a method claim, recites similar limitations as in claim 2, see rationale as previously discussed above.

Regarding claim 29, which is also a method claim, recites similar limitations as in claim 3, see rationale as previously discussed above.

Regarding claim 30, which is also a method claim, recites similar limitations as in claim 10, see rationale as previously discussed above.

Regarding claim 31, which is the memory medium version of claim 1, see rationale as previously discussed above.

Regarding claim 32, which is the memory medium version of claim 2, see rationale as previously discussed above.

Regarding claim 33, which is the memory medium version of claim 3, see rationale as previously discussed above.

Regarding claim 34, which is the memory medium version of claim 10, see rationale as previously discussed above.

Regarding claim 35, which is also a memory medium claim, recites similar limitations as in claim 10, see rationale as previously discussed above.

Regarding claim 36, which is also a memory medium claim, recites similar limitations as in claim 10, see rationale as previously discussed above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leask et al. USPN 6,412,106 B1 (hereinafter "Leask") in view of Kodosky USPN 5,481,740 as applied in claim 7 in view of McKee et al. USPN 5,915,114 (hereinafter " McKee").

Regarding claim 8, Leask as modifed discloses all the claimed limitations as applied in claim 7 above. The combination of Leask and Kodosky doesn't explicitly disclose including differences in execution times between the plurality of executions of

the debugging graphical program, wherein said differences in execution times are useable in optimizing performance. However, Mckee discloses analyzing " the code being executed for non-optimal instructions streams and modifies the code in real time in order to generate optimized object code that is capable of enhanced performance for the given data being run with the program" (3: 42 – 47). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Leask and Kodosky with McKee because, it would have enabled the generation of optimized code.

Response to Arguments

7. Applicant's arguments with respect to claims 1 - 36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuck Kendall whose telephone number is 571-2723698. The examiner can normally be reached on 10:00 am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on 571-2723695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CK

TUAN DAM
SUPERVISORY PATENT EXAMINER